FCC PART 15.247

TEST REPORT

For

SZ DJI TECHNOLOGY CO., LTD

14th floor, West Wing, Skyworth Semiconductor Design Building NO.18 Gaoxin South 4th Ave, Nanshan, Shenzhen, Guangdong, China

FCC ID: SS3-AG4051701

Report Type:	Product Name:
Original Report	AGRAS MG-1S

Test Engineer:	*Kevin Hu*
Report Number:	RDG170108002A
Report Date:	2017-02-15
Reviewed By:	Henry Ding EMC Leader
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Chengdu) 5040, HuiLongWan Plaza, No. 1, ShaWan Road, JinNiu District, ChengDu, China Tel: 028-65523123, Fax: 028-65525125 www.baclcorp.com

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The ***SZ DJI TECHNOLOGY CO., LTD***'s product, model number: ***3W-DJI-8-10-015 (FCC ID: SS3-AG4051701)*** (the "EUT") in this report was a ***AGRAS MG-1S***, which was measured approximately: 147.1 cm (L) x147.1 cm (W) x 48.2 cm(H), rated input voltage: DC50.4V from lithium battery(two batteries connected in series, total highest voltage is 50.4V).

**All measurement and test data in this report was gathered from final production sample, serial number: 170108002 (assigned by the BACL, Chengdu). It may have deviation from any other sample.The EUT supplied by the applicant was received on 2017-01-13, and EUT conformed to test requirement.*

Objective

This report is prepared on behalf of ***SZ DJI TECHNOLOGY CO., LTD*** in accordance with Part 2, Subpart J, Part 15, Subparts A, B and C of the Federal Communications Commission's rules

The tests were performed in order to determine the compliance of the EUT with FCC Part 15-Subpart C, section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

Part of system submissions with FCC ID: SS3-DLG60A1701.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Chengdu). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

The uncertainty of any RF tests which use conducted method measurement is ±3.17 dB, the uncertainty of any radiation on emissions measurement is:

30M~200MHz: ±4.7 dB;
200M~1GHz: ±6.0 dB;
1G~6GHz: ±5.13dB;
6G~25GHz: ±5.47dB;

And the uncertainty will not be taken into consideration for all test data recorded in the report.

Test Facility

The test site used by BACL to collect test data is located in the5040, HuiLongWan Plaza, No. 1, ShaWan Road,JinNiu District, ChengDu, China

Test site at BACL has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on April 24, 2015. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.:560332. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a testing mode by test software. The device has 4 antennas for LB mode, system only configured one antenna for transmitting depend on good performance.
The device employed 46 channels as below:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2408	24	2442.5
2	2409.5	…	…
…	…	…	…
…	…	…	…
…	…	45	2474
23	2441	46	2475.5

3channels were tested: 2408MHz, 2442.5MHz and 2475.5MHz

Equipment Modifications

No modification was made to the EUT.

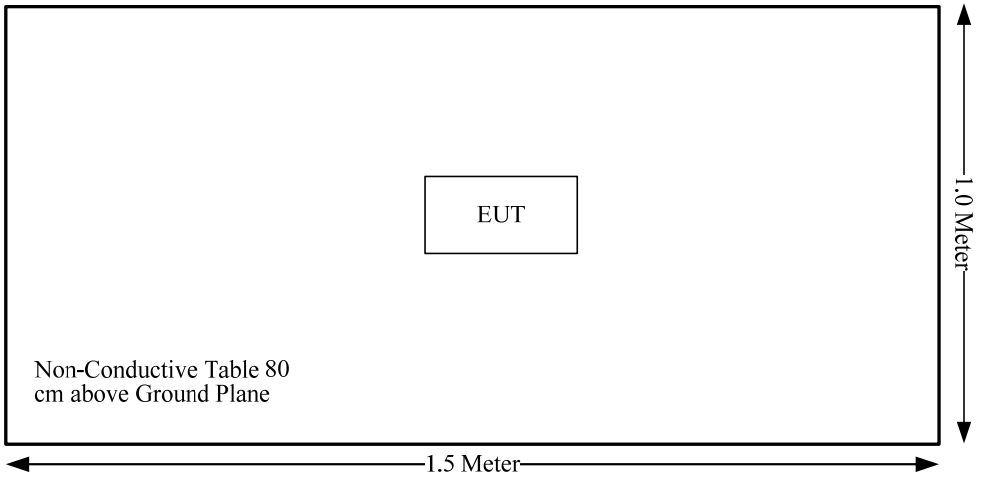
EUT Exercise Software

The software “DJI-RF Certification” was used for testing. The maximum power was configured as below table.

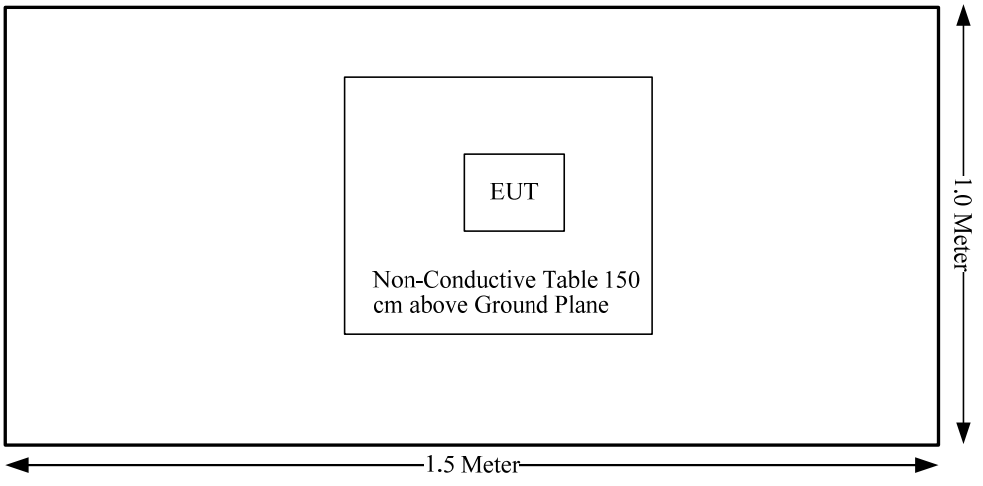
Test Software	DJI-RF Certification		
Test Frequency	2408MHz	2442.5MHz	2475.5MHz
Power Level Setting	15	20	20

Block Diagram of Test Setup

Radiation test below 1GHz:



Radiation test above 1GHz:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.247 (i) & §1.1307 & §2.1091	Maximum Permissible Exposure (MPE)	Compliance
§15.203	Antenna Requirement	Compliance
§15.207 (a)	Conducted Emissions	Not Applicable
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliance
§15.247 (a)(1)	20 dB Bandwidth	Compliance
§15.247(a)(1)	Channel Separation Test	Compliance
§15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	Compliance
§15.247(a)(1)(iii)	Quantity of hopping channel Test	Compliance
§15.247(b)(1)	Peak Output Power Measurement	Compliance
§15.247(d)	Band Edges	Compliance

Not Applicable: the device was powered by battery.

FCC §15.247 (i) & §1.1307 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247(i) and subpart §1.1307, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

Frequency (MHz)	**Antenna Gain**		**Maximum Power including tolerance**		**Evaluation Distance (cm)**	**Power Density (mW/cm^2)**	**MPE Limit (mW/cm^2)**
	(dBi)	**(numeric)**	**(dBm)**	**(mW)**			
2408-2475.5	3.5	2.24	19	79.43	20.00	0.0354	1.0

Note: The tune-up power including tolerance is declared by manufacturer.

Result: The device meet FCC MPE at 20 cm distance

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.
c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Antenna Connector Construction

The EUT has 4 internal antennas arrangement for LB mode, the antenna gain are 3.5dBi@ 2.4GHz band, that fulfill the requirement of the item. Please refer to the internal photos.

Result: Compliance.

FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cispr} of Table 2, then:
–compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
–non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.
If U_{lab} is greater than U_{cispr} of Table 2, then:
–compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
–non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

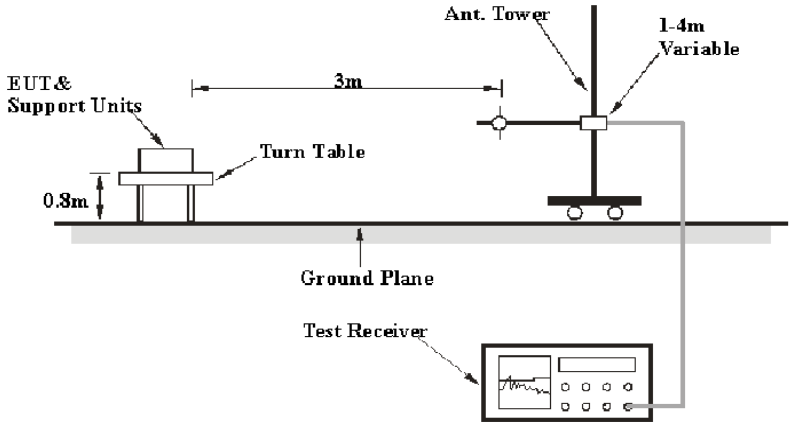
Based on CISPR 16-4-2-2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Chengdu) is:
30M~200MHz: ±4.7 dB;
200M~1GHz: ±6.0 dB;
1G~6GHz: ±5.13dB;
6G~25GHz: ±5.47 dB;

Table 2 – Values of U_{cispr}

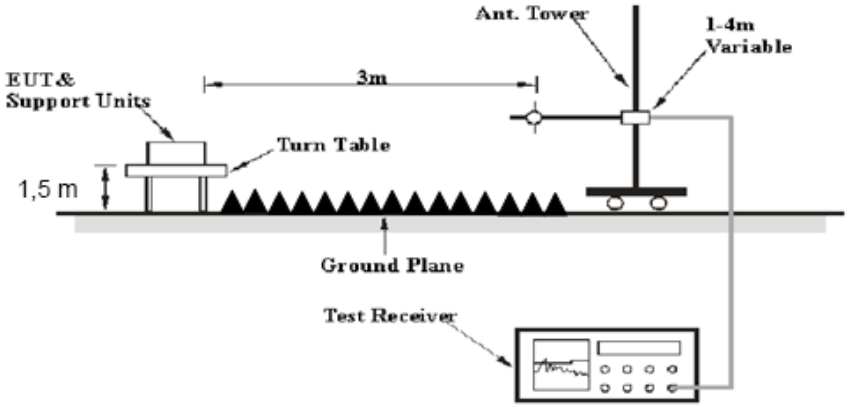
Measurement		U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC)	(30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR)	(1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR)	(6 GHz to 18 GHz)	5.5 dB

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

30MHz-1000MHz:

Detector	RBW	Video B/W	IF B/W
QP	120 kHz	300 kHz	120kHz

1GHz- 25GHz:

Detector	RBW	Video B/W
PK	1MHz	3 MHz
Ave.	1MHz	10 Hz

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Loss + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Amplifier	8447D	2944A10442	2016-12-02	2017-12-01
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2016-12-02	2017-12-01
Sunol Sciences	Broadband Antenna	JB3	A101808	2016-04-10	2019-04-09
Rohde & Schwarz	Spectrum Analyzer	FSEM30	100018	2016-12-02	2017-12-01
ETS	Horn Antenna	3115	003-6076	2016-12-02	2017-12-01
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-0113028	2014-06-16	2017-06-15
Mini-circuits	Amplifier	ZVA-183-S+	771001215	2016-5-20	2017-05-19
HP	Amplifier	8449B	3008A00277	2016-12-02	2017-12-01
EMCT	Semi-Anechoic Chamber	966	N/A	2015-04-24	2018-04-23
N/A	RF Cable (below 1GHz)	NO.1	N/A	2016-11-10	2017-11-09
N/A	RF Cable (below 1GHz)	NO.4	N/A	2016-11-10	2017-11-09
N/A	RF Cable (above 1GHz)	NO.2	N/A	2016-11-10	2017-11-09

*** Statement of Traceability:** BACL (Chengdu) attested that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	22.4 °C
Relative Humidity:	56 %
ATM Pressure:	101.3 kPa

The testing was performed by Kevin Hu on 2017-01-19.

Test Result: Compliance, please Refer to the following data

Test Mode: Transmitting

30MHz-25GHz:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel: 2408 MHz									
2408	77.47	PK	H	23.51	3.00	0.00	103.98	N/A	N/A
2408	70.81	AV	H	23.51	3.00	0.00	97.32	N/A	N/A
2408	83.45	PK	V	23.51	3.00	0.00	109.96	N/A	N/A
2408	76.16	AV	V	23.51	3.00	0.00	102.67	N/A	N/A
2390	28.39	PK	V	23.57	3.00	0.00	54.96	74	19.04
2390	16.06	AV	V	23.57	3.00	0.00	42.63	54	11.37
4816	33.38	PK	V	30.81	5.12	26.87	42.44	74	31.56
4816	21.29	AV	V	30.81	5.12	26.87	30.35	54	23.65
7224	33.70	PK	V	34.75	6.17	26.36	48.26	74	25.74
7224	21.55	AV	V	34.75	6.17	26.36	36.11	54	17.89
9632	32.77	PK	V	37.08	7.80	26.19	51.46	74	22.54
9632	20.69	AV	V	37.08	7.80	26.19	39.38	54	14.62
3201	38.59	PK	V	25.33	3.73	26.48	41.17	74	32.83
3201	26.46	AV	V	25.33	3.73	26.48	29.04	54	24.96
90.14	47.45	QP	H	8.42	0.55	28.34	28.08	43.50	15.42
162.89	49.32	QP	H	12.27	0.96	28.00	34.55	43.50	8.95
Middle Channel: 2442.5 MHz									
2442.5	77.52	PK	H	23.40	3.00	0.00	103.92	N/A	N/A
2442.5	71.46	AV	H	23.40	3.00	0.00	97.86	N/A	N/A
2442.5	86.08	PK	V	23.40	3.00	0.00	112.48	N/A	N/A
2442.5	80.01	AV	V	23.40	3.00	0.00	106.41	N/A	N/A
4885	33.67	PK	V	31.03	5.09	26.87	42.92	74	31.08
4885	21.48	AV	V	31.03	5.09	26.87	30.73	54	23.27
7327.5	34.19	PK	V	34.96	6.22	26.40	48.97	74	25.03
7327.5	22.07	AV	V	34.96	6.22	26.40	36.85	54	17.15
9770	31.71	PK	V	37.16	7.71	26.28	50.3	74	23.7
9770	19.52	AV	V	37.16	7.71	26.28	38.11	54	15.89
3120	40.44	PK	V	24.87	3.61	26.45	42.47	74	31.53
3120	27.36	AV	V	24.87	3.61	26.45	29.39	54	24.61
3362	37.09	PK	V	26.23	3.97	26.54	40.75	74	33.25
3362	24.07	AV	V	26.23	3.97	26.54	27.73	54	26.27
90.14	47.72	QP	H	8.42	0.55	28.34	28.35	43.50	15.15
162.89	49.46	QP	H	12.27	0.96	28.00	34.69	43.50	8.81
High Channel: 2475.5 MHz									
2475.5	78.12	PK	H	23.28	2.99	0.00	104.39	N/A	N/A
2475.5	71.41	AV	H	23.28	2.99	0.00	97.68	N/A	N/A
2475.5	86.10	PK	V	23.28	2.99	0.00	112.37	N/A	N/A
2475.5	79.78	AV	V	23.28	2.99	0.00	106.05	N/A	N/A
2483.5	31.71	PK	V	23.26	2.99	0.00	57.96	74	16.04
2483.5	18.52	AV	V	23.26	2.99	0.00	44.77	54	9.23
4951	33.98	PK	V	31.24	5.05	26.88	43.39	74	30.61
4951	20.96	AV	V	31.24	5.05	26.88	30.37	54	23.63
7426.5	34.63	PK	V	35.15	6.27	26.45	49.6	74	24.4
7426.5	21.47	AV	V	35.15	6.27	26.45	36.44	54	17.56
9902	32.85	PK	V	37.24	7.61	26.36	51.34	74	22.66
9902	19.68	AV	V	37.24	7.61	26.36	38.17	54	15.83
2980	40.27	PK	V	24.16	3.41	26.43	41.41	74	32.59
2980	28.35	AV	V	24.16	3.41	26.43	29.49	54	24.51
90.14	48.56	QP	H	8.42	0.55	28.34	29.19	43.50	14.31
162.89	49.88	QP	H	12.27	0.96	28.00	35.11	43.50	8.39

FCC §15.247(a) (1) - CHANNEL SEPARATION TEST

Applicable Standard

Frequency hopping systems shall have hoping channel carrier frequencies separated by a minimum of 25 kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.50 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	831929/005	2016-09-21	2017-09-20
N/A	RF Cable	N/A	N/A	Each Time	/

*** Statement of Traceability:** BACL (Chengdu) attested that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

1. Set the EUT in transmitting mode, RBW was set at 100 kHz, maxhold the channel.
2. Set the adjacent channel of the EUT maxhold another trace.
3. Measure the channel separation.

Test Data

Environmental Conditions

Temperature:	24.2 °C
Relative Humidity:	52 %
ATM Pressure:	102 kPa

The testing was performed by Kevin Hu on 2017-01-20.

Test Result: Compliance.

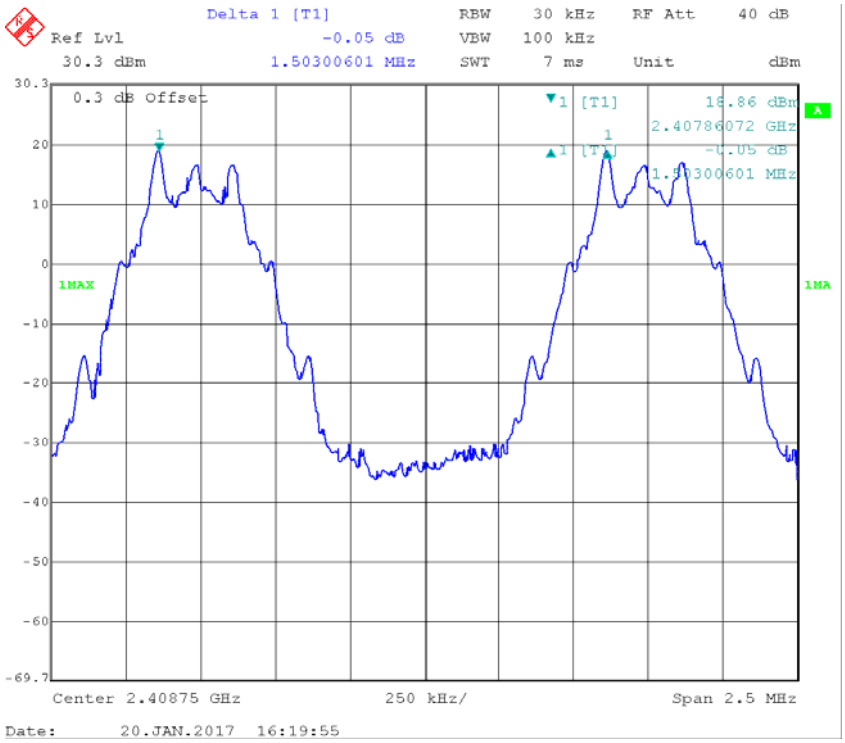
Please refer to following tables and plots

Test Mode: Transmitting(Test performed at left antenna chain)

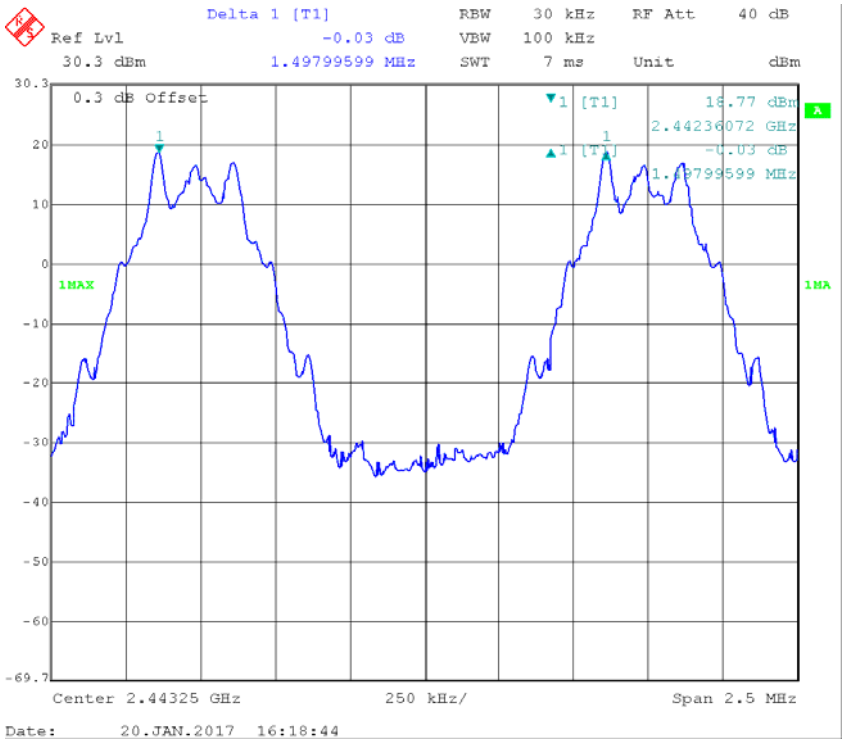
Channel	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)
Low	2408	1.503	0.341
Middle	2442.5	1.498	0.339
High	2475.5	1.503	0.341

**Note: Limit= (2/3)× 20 dB bandwidth*

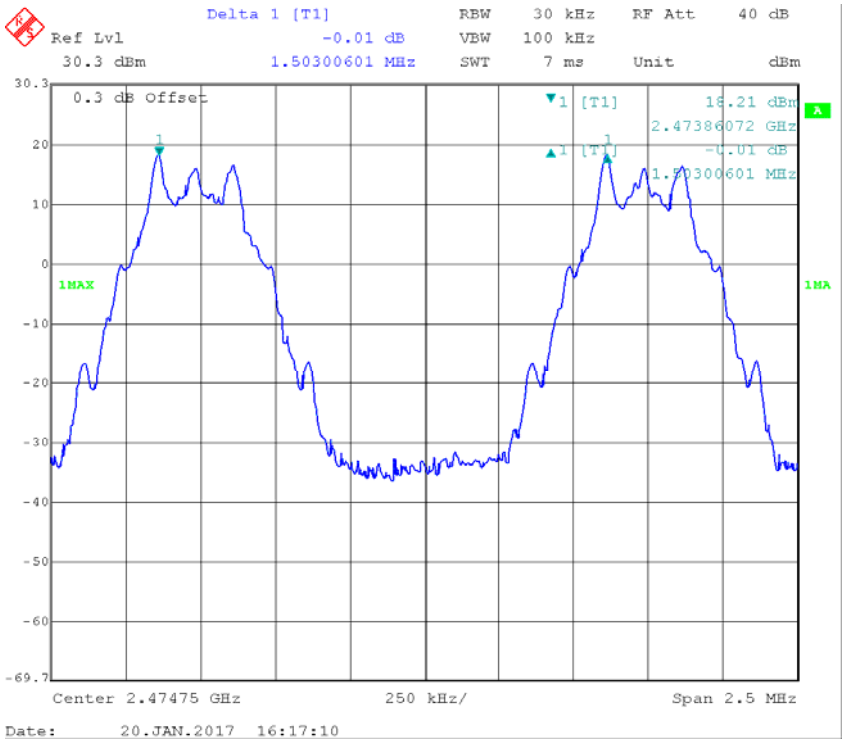
Low Channel



Middle Channel



High Channel



FCC §15.247(a) (1) – 20 dB BANDWIDTH TESTING

Applicable Standard

Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT on the test table without connection to measurement instrument. Turn on the EUT. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	831929/005	2016-09-21	2017-09-20
N/A	RF Cable	N/A	N/A	Each Time	/

*** Statement of Traceability:** BACL (Chengdu) attested that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	24.2 °C
Relative Humidity:	52 %
ATM Pressure:	102 kPa

The testing was performed by Kevin Hu on 2017-01-20.

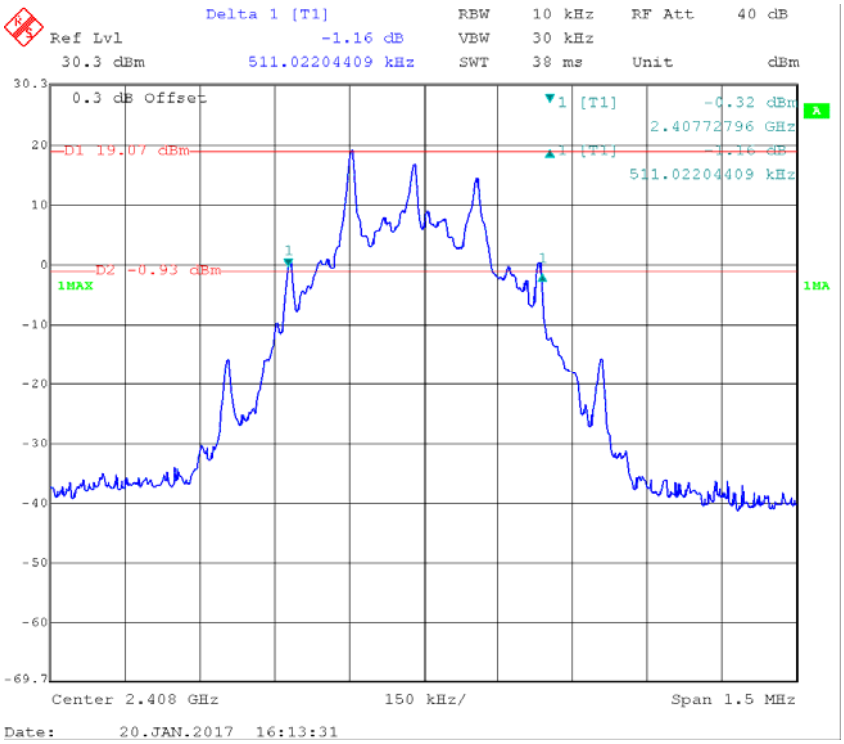
Test Result: Compliance.

Please refer to following tables and plots

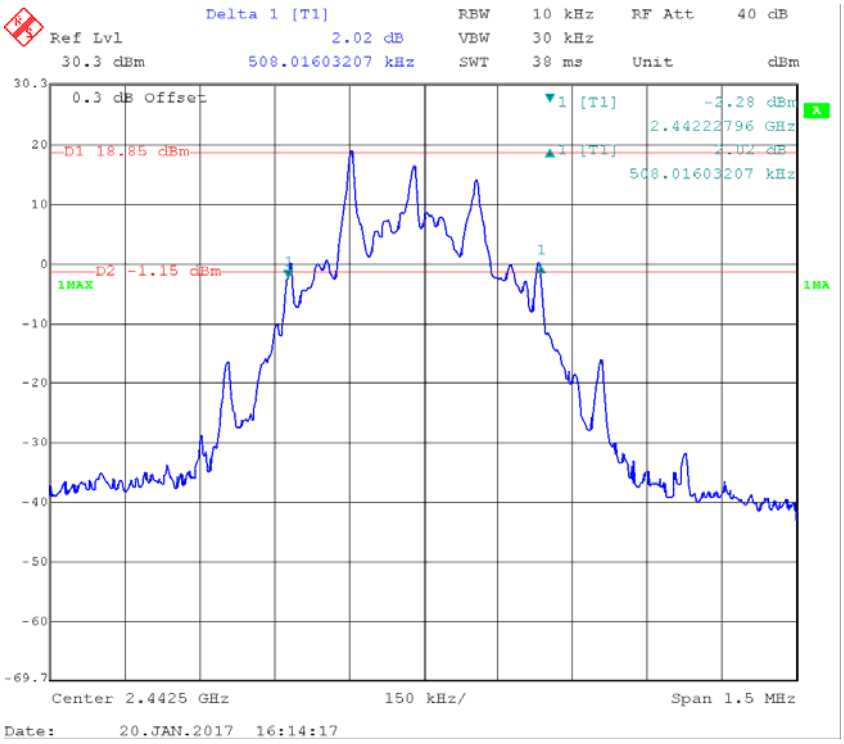
Test Mode: Transmitting(Test performed at antenna chain 0)

Frequency (MHz)	20 dB Bandwidth (MHz)
2408	0.511
2442.5	0.508
2475.5	0.511

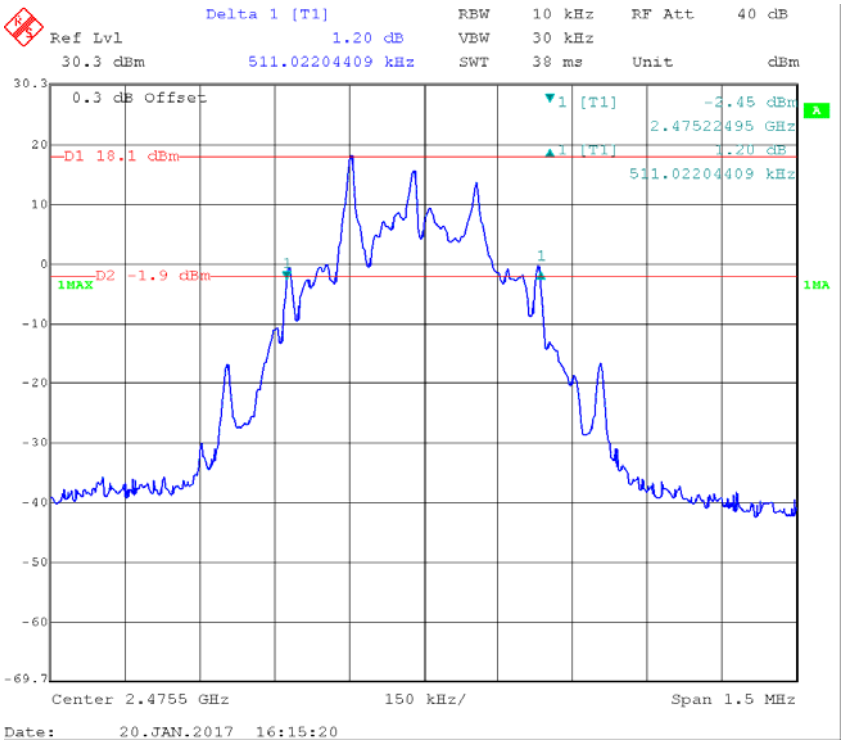
Low Channel



Middle Channel



High Channel



FCC §15.247(a) (1) (iii) - QUANTITY OF HOPPING CHANNEL TEST

Applicable Standard

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

Test Procedure

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Set the EUT in hopping mode from first channel to last.
3. By using the Max-Hold function record the Quantity of the channel.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	831929/005	2016-09-21	2017-09-20
N/A	RF Cable	N/A	N/A	Each Time	/

*** Statement of Traceability:** BACL (Chengdu) attested that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	24.2 °C
Relative Humidity:	52 %
ATM Pressure:	102 kPa

The testing was performed by Kevin Hu on 2017-01-20.

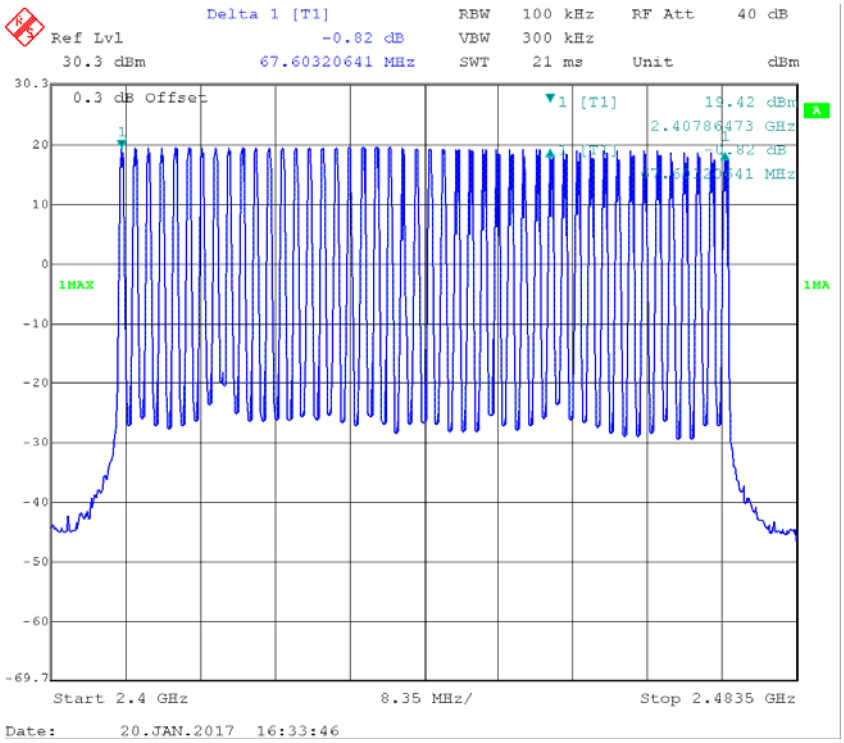
Test Result: Compliance. *(Test performed at antenna chain 0)*

Please refer to following tables and plots

Test Mode: Transmitting

Frequency Range (MHz)	Number of Hopping Channel	Limit
2400-2483.5	46	≥15

Number of Hopping Channels



FCC §15.247(a) (1) (iii) - TIME OF OCCUPANCY (DWELL TIME)

Applicable Standard

Frequency hopping systems in the 2400-2483.5 MHz shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

Test Procedure

The EUT was worked in channel hopping; Spectrum SPAN was set as 0. Sweep was set as 0.4 * channel no. (s), the quantity of pulse was get from single sweep. In addition, the time of single pulses was tested.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	831929/005	2016-09-21	2017-09-20
N/A	RF Cable	N/A	N/A	Each Time	/

*** Statement of Traceability:** BACL (Chengdu) attested that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	24.2 °C
Relative Humidity:	52 %
ATM Pressure:	102 kPa

The testing was performed by Kevin Hu on 2017-01-20.

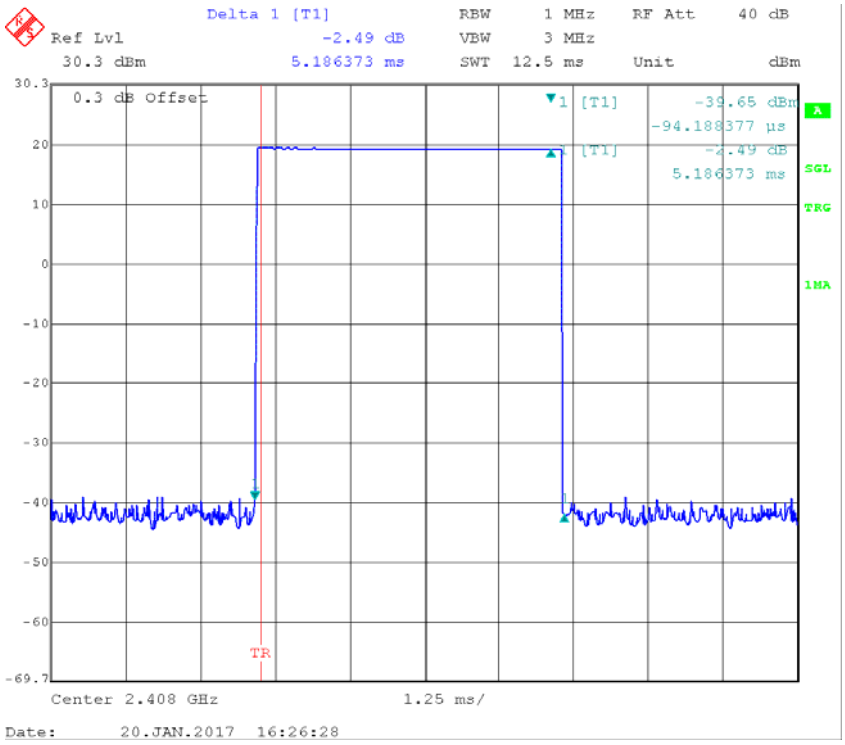
Test Result: Compliance *(Test performed at left antenna chain 0)*.

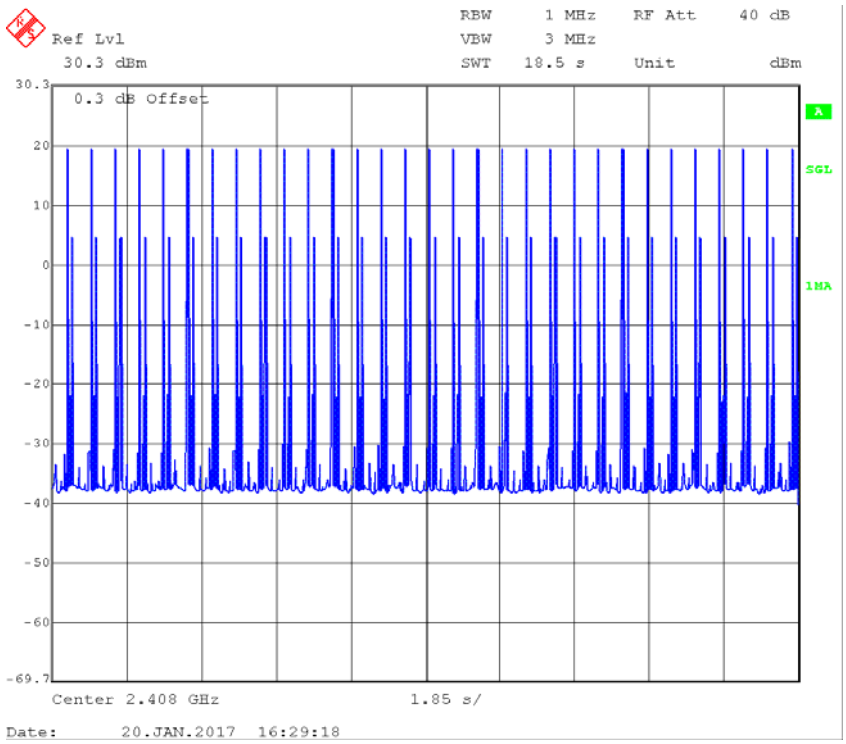
Please refer to following tables and plots

Test Mode: Transmitting

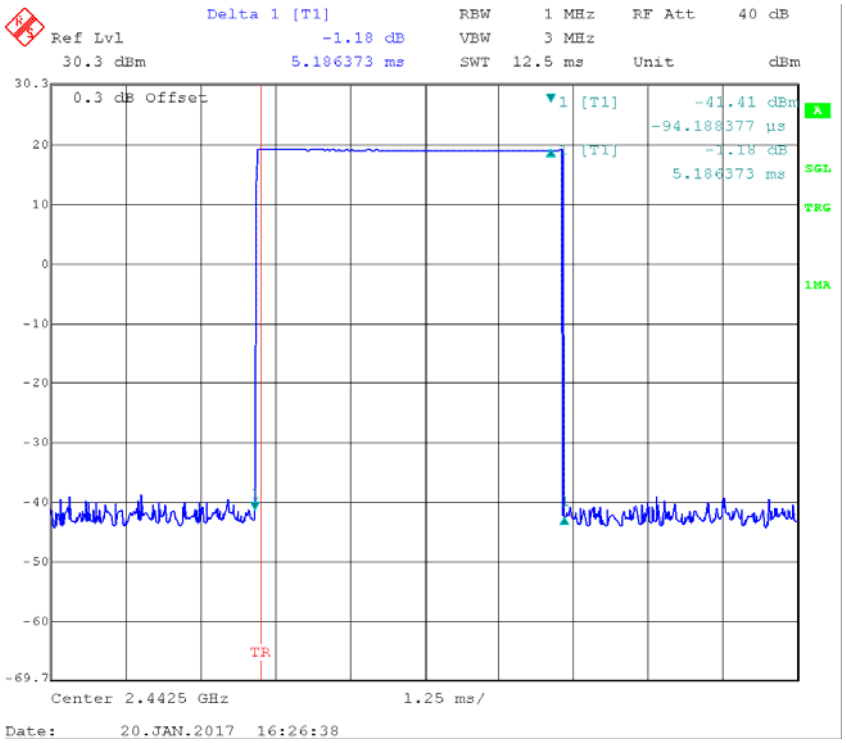
Channel	Occupancy Time For Single Hop (ms)	Real Observed Period (s)	Hops in Observed Period	Dwell time(s)	Limit (s)	Result
Low	5.186	18.5	31	0.161	0.4	Compliance
Middle	5.186	18.5	31	0.161	0.4	Compliance
High	5.186	18.5	31	0.161	0.4	Compliance
Note: Dwell time=Pulse time (ms) × hopping number per channel in 18.5s×hopping channels/18.5× 0.4						

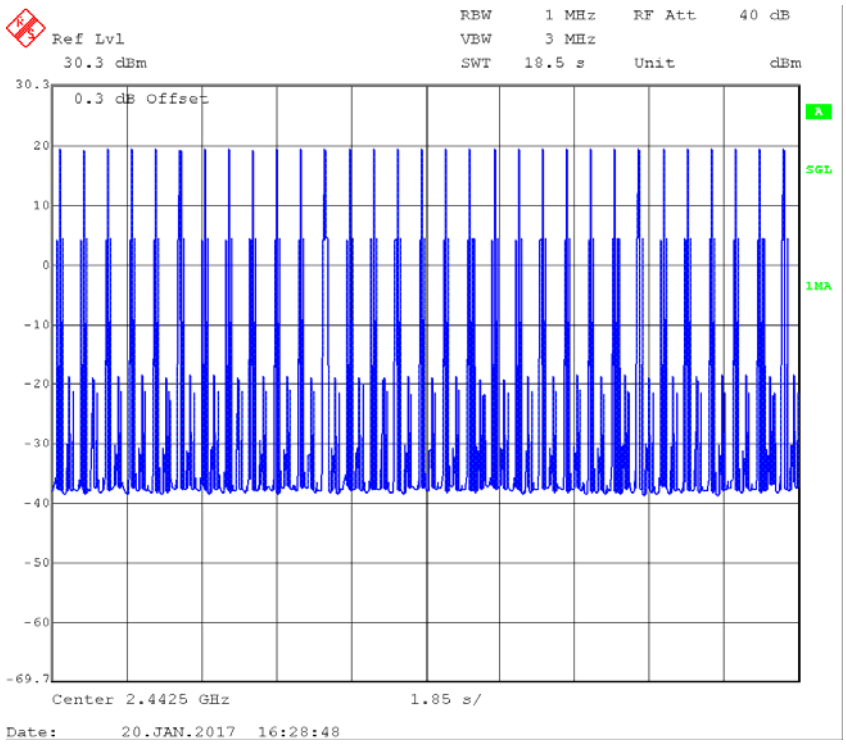
Low Channel



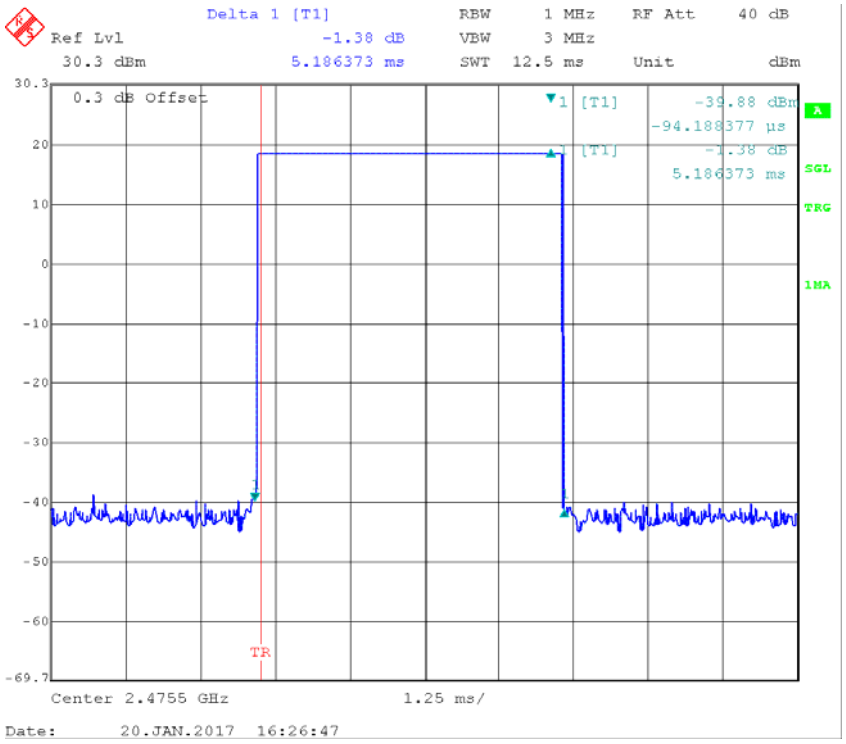


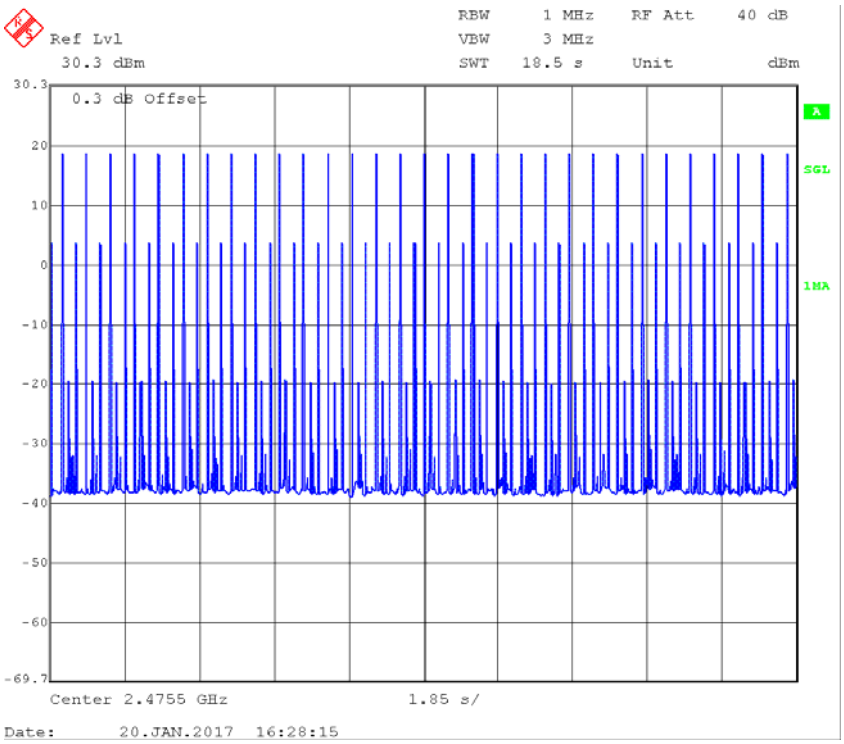
Middle Channel





High Channel




RBW 1 MHz
RF Att 40 dB
VBW 3 MHz
Ref Lvl
30.3 dBm
SWT 18.5 s
Unit dBm
0.3 dB Offset
30.3
20
10
0
-10
-20
-30
-40
-50
-60
-69.7
A
SGL
1MA
Center 2.4755 GHz
1.85 s/
Date: 20.JAN.2017 16:28:15

FCC §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT

Applicable Standard

According to §15.247(b) (1), for frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts

Test Procedure

1. Place the EUT on a bench and set in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Wideband Power Sensor	N1921A	MY54170074	2017-01-03	2018-01-02
Agilent	P-Series Power Meter	N1912A	MY5000798	2017-01-03	2018-01-02
N/A	RF Cable	N/A	N/A	Each Time	/

*** Statement of Traceability:** BACL (Chengdu) attested that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	24.2 °C
Relative Humidity:	52 %
ATM Pressure:	102 kPa

The testing was performed by Kevin Hu on 2017-01-20.

Test Result: Compliance.

Test Mode: Transmitting

Channel	Frequency (MHz)	Conducted Peak Output power (dBm)				Limit (dBm)
		Chain 0	Chain 1	Chain 2	Chain 3	
Low	2408	17.21	17.1	16.81	17.11	21
Middle	2442.5	18.62	18.63	18.15	18.46	21
High	2475.5	18.11	18.11	17.64	17.92	21

FCC §15.247(d) - BAND EDGES TESTING

Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Remove the antenna from the EUT and then connect to a low loss RF cable from the antenna port to a EMI test receiver, then turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
3. Set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	831929/005	2016-09-21	2017-09-20
N/A	RF Cable	N/A	N/A	Each Time	/

*** Statement of Traceability:** BACL (Chengdu) attested that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

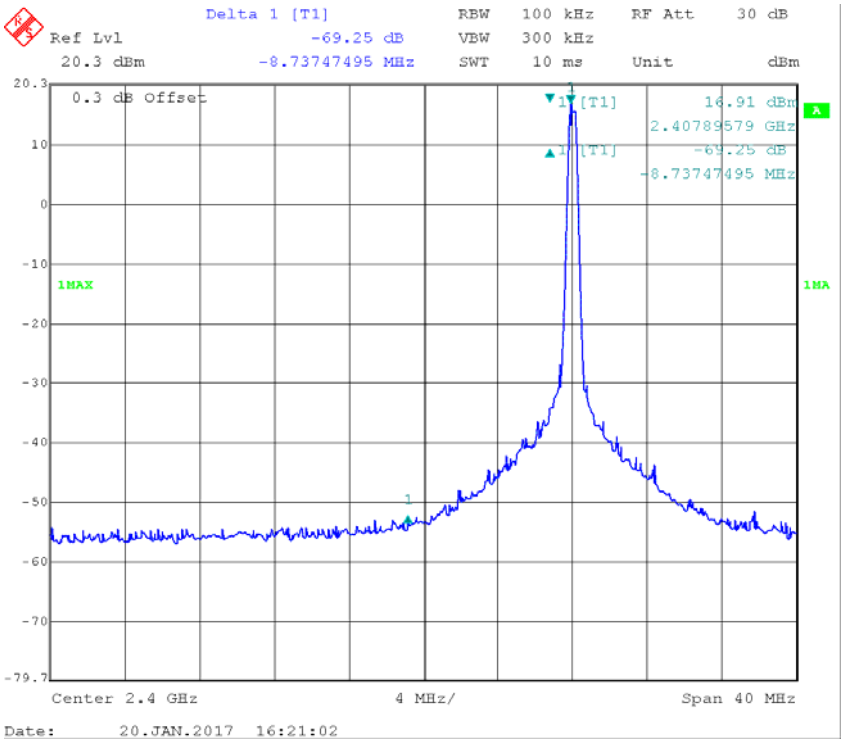
Environmental Conditions

Temperature:	24.2 °C
Relative Humidity:	52 %
ATM Pressure:	102 kPa

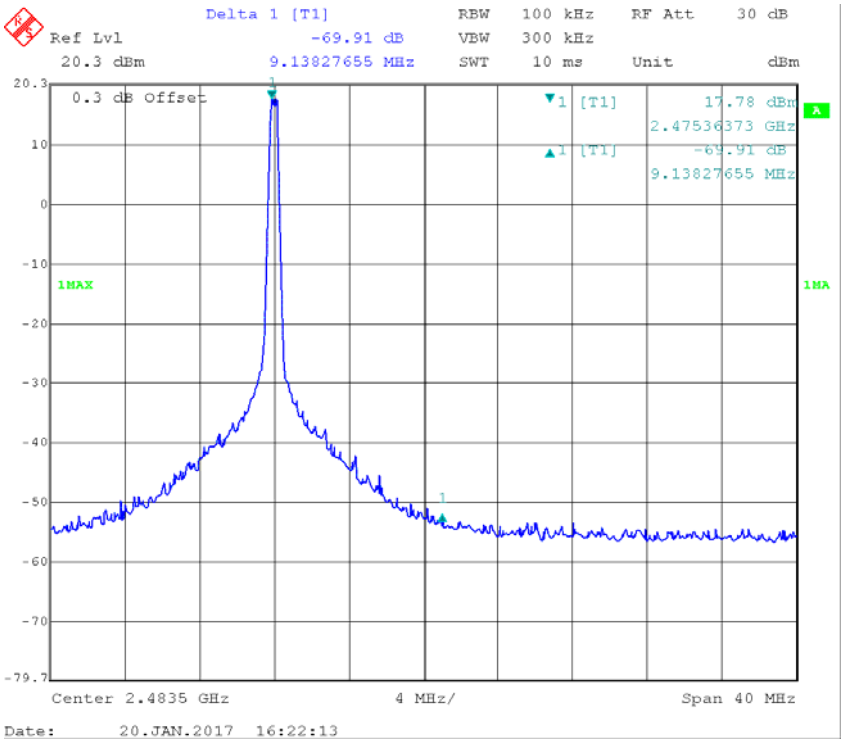
The testing was performed by Kevin Hu on 2017-01-20.

Test Result: Compliance

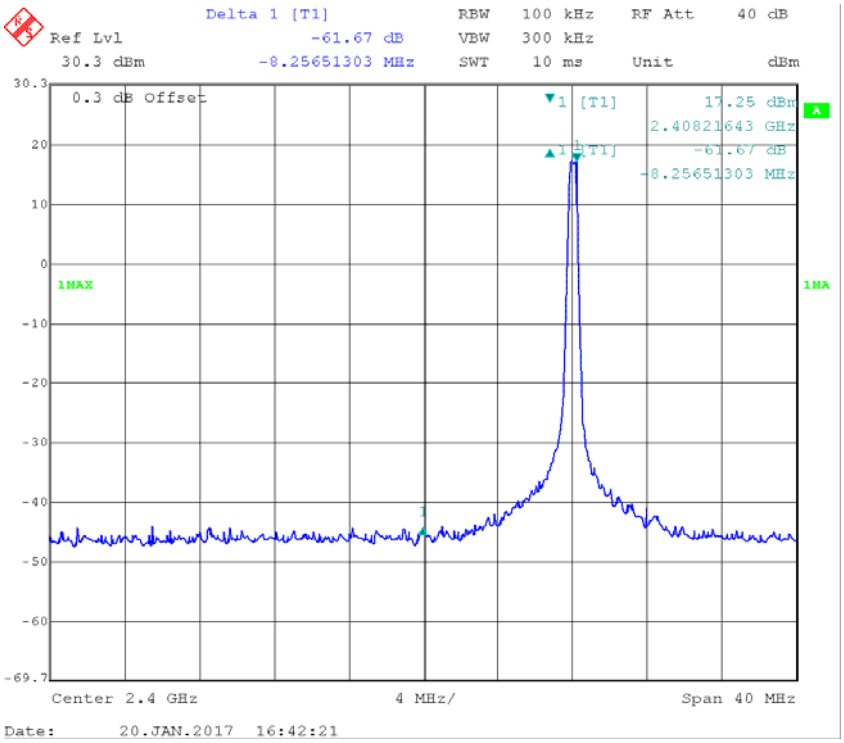
Chain 0 - Band Edge, Left Side



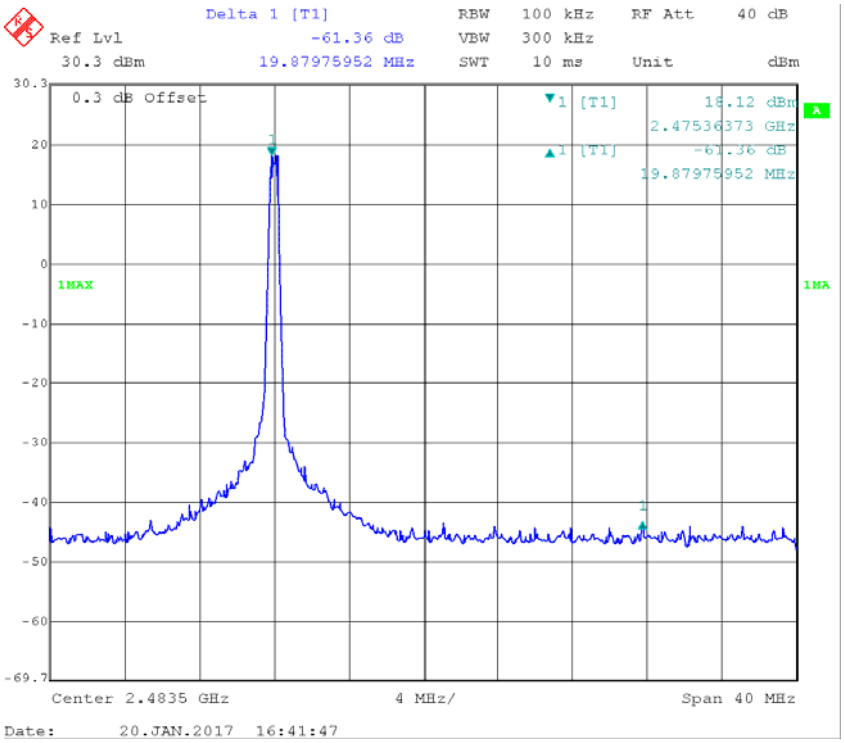
Chain 0 - Band Edge, Right Side



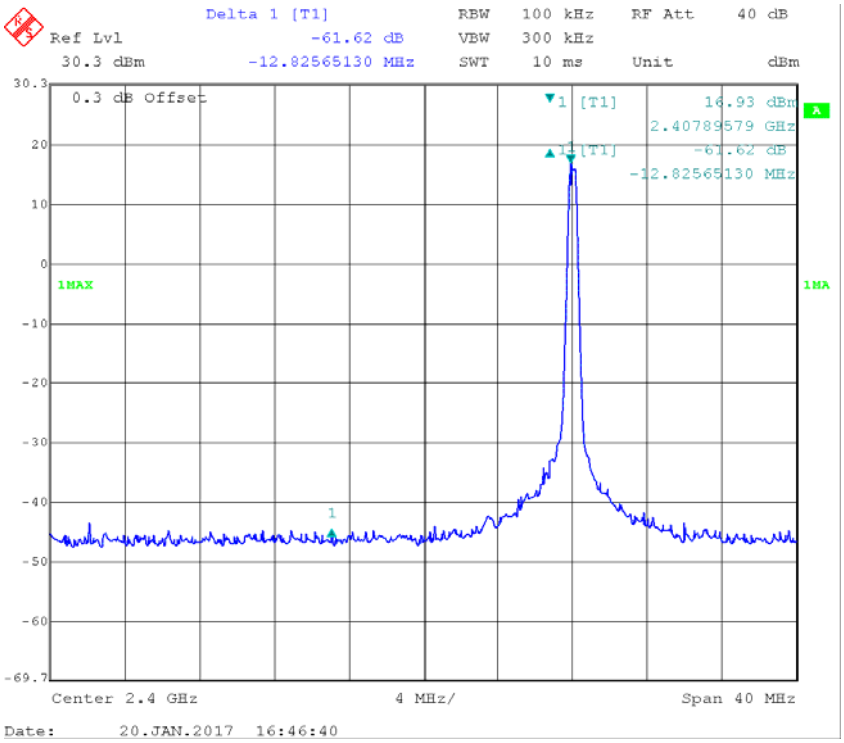
Chain 1 - Band Edge, Left Side



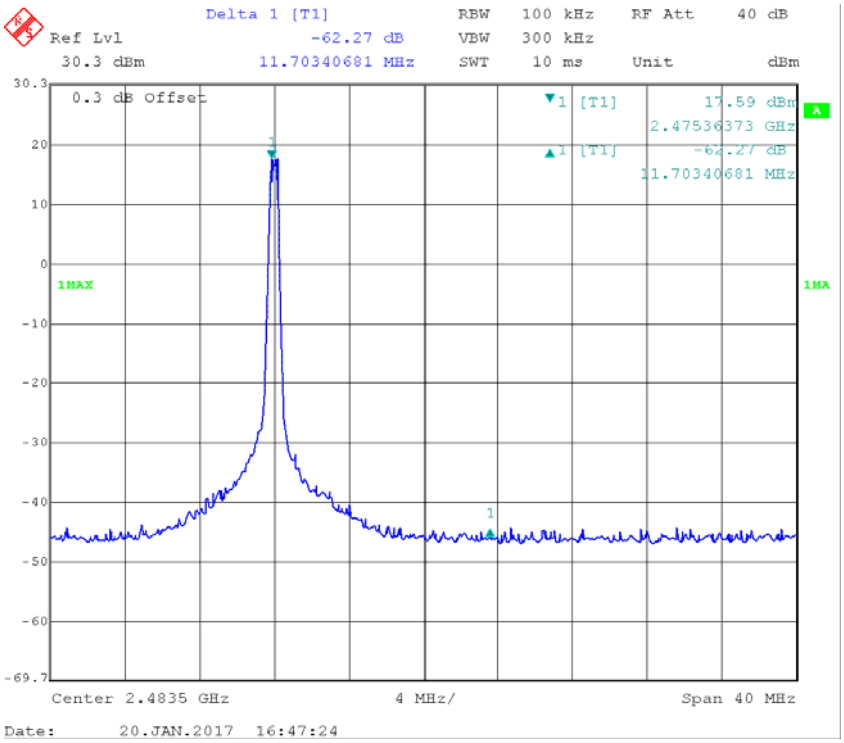
Chain 1 - Band Edge, Right Side



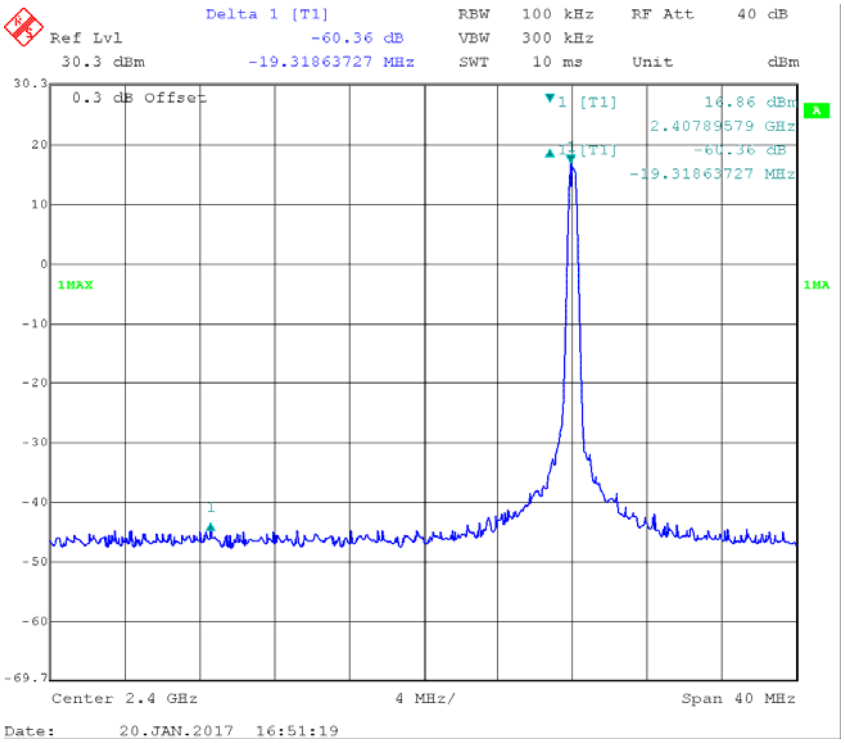
Chain 2 - Band Edge, Left Side



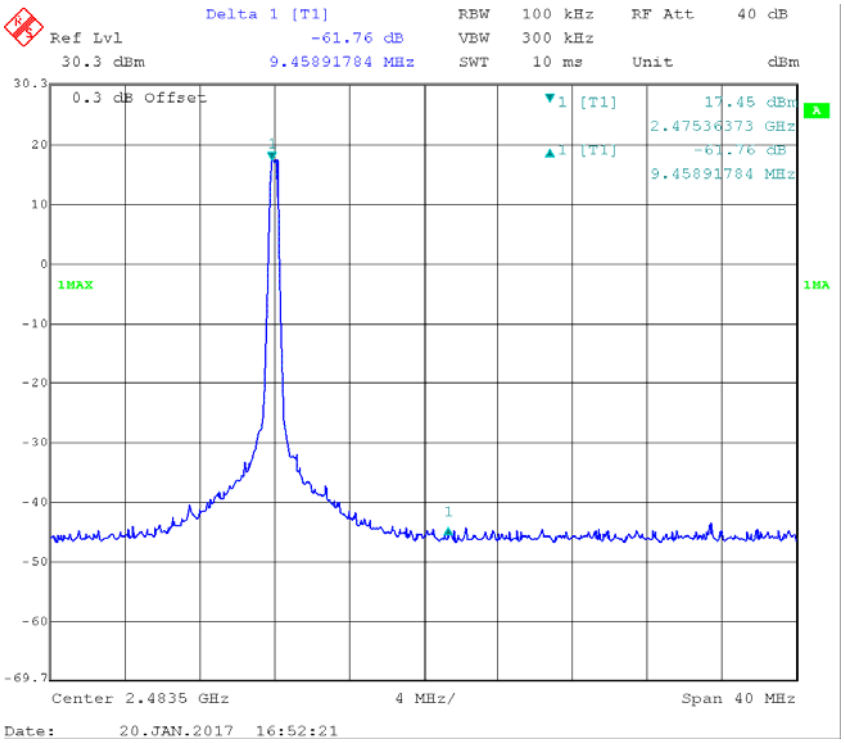
Chain 2 - Band Edge, Right Side



Chain 3 - Band Edge, Left Side



Chain 3 - Band Edge, Right Side



********END OF REPORT********